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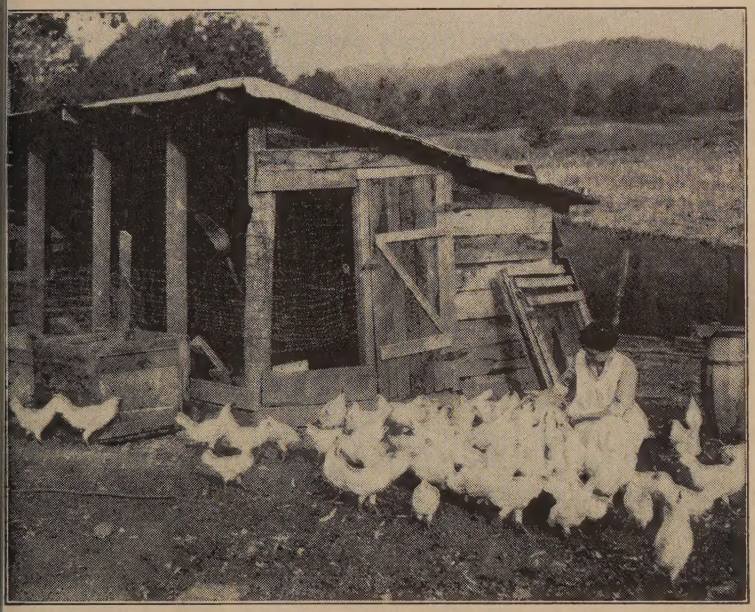
Preliminary Agricultural Program

FOR

Western North Carolina



POULTRY IS THE ONE UNIVERSAL CROP GROWN ON MOUNTAIN FARMS IN WESTERN NORTH CAROLINA

NORTH CAROLINA
STATE COLLEGE OF AGRICULTURE AND ENGINEERING
AND
U. S. DEPARTMENT OF AGRICULTURE, CO-OPERATING
N. C. AGRICULTURAL EXTENSION SERVICE
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STATE COLLEGE STATION
RALEIGH

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AGRICULTURAL PROGRAM FOR WESTERN NORTH CAROLINA

Farmers of Western North Carolina have sensed the need for progressive action and to hasten the agricultural development of the section, are working together to bring this about. During the latter part of 1925, there were organized in the twenty counties of the mountain section, groups of leading farmers who formed county boards of agriculture. These boards were formed around the county agricultural agent and are composed of two leading farmers of each township with sometimes a member of the board of county commissioners and the county seat chamber of commerce also added. These local county boards have appointed chairmen and executive committees and have met to consider the needs of agriculture in each county.

The Boards have worked out a co-operative plan of action between the farmers and the county agent with the result that the agent knows exactly how to proceed in his educational work and the farmers, on the other hand, know just what they must do to help in the plan. The farmers have said, for instance, that they will want two carloads of pure-bred dairy cattle in a certain county in 1926; that they want more pasture work, some sheep, some orchard demonstrations or some trips to other sections. The county agent has said that this can be done with the help of the Boards. In effect, the agent has pointed out that any program of work, to be successful, must have the unqualified backing of the farmers and now that the Boards can speak for the county, it is wise to organize for a long time period and work through that period for the agricultural progress of a county. These Boards plan to meet with the agent every two or three months and take stock of conditions. Then it can be seen what progress has been made or why failure to progress has come about.

The next step forward was to have a big sectional meeting at which representatives from fourteen mountain counties were present. This meeteing was held in Asheville on Thursday, December 17th. In addition to the farmers from fourteen counties, there were present also all the county agents and a number of specialists from the State College of Agriculture, including its President, Dr. E. C. Brooks.

The meeting was presided over by D. M. Buck, of Yancey County, and fourteen committees were appointed by Mr. Buck to consider the

needs of a more profitable agriculture throughout the entire mountain region. Shortly after the meeting had been called to order and the committees appointed, Director I. O. Schaub, of State College, gave some ideas as to a broad program of work for the mountain territory and told the gathering that such a program would later be adopted for the entire state should there be sufficient interest shown by all organizations working for the good of the farmers in North Carolina.

There was no other speech-making. The fourteen committees went to work. One concerned itself with resolutions and the nominating of officers for a permanent organization. Another was the executive committee to stay in office during the coming year and bring

Fruit Growers Attending Orchard Tour in Henderson County. County Agent E. F. Arnold, Assisted By Extension Horticulturist, H. R. Niswonger.

back suggestions to the next gathering. A third committee worked on recommendations as to soil improvement, corn, hay and small grains. And so on, with committee work covering special crops, dairy cattle and poultry, beef cattle, sheep and hogs, horticulture, forestry, agricultural organizations, farm and home equipment, and farm economics. The committees were composed entirely of farmers with a county agent loaned to each as secretary.

After laboring all day, the committees returned to the conference hall at three o'clock to make their reports. Each report commented on conditions as they now exist in the mountains, gave suggestions as to how these conditions might be improved, discussed methods of carrying out the improvements and then gave recommenda-

tions for such research work as was needed to secure additional and needed information.

The suggestions were read and adopted, either in whole or in part, and became a permanent record of the organization as a guide to extension workers and farmers as to future agricultural activity in the mountains.

The groups voted to name the organization "Carolina Highlands Agricultural Association," and named D. M. Buck as permanent head for the coming year. The association will meet again next December and see what progress has been made. It plans to extend invitations

A VIEW SHOWING HOW CUT-OVER LAND IS BEING RECLAIMED FOR FARMING. PICTURE TAKEN IN AVERY COUNTY NEAR THE COUNTY SEAT, NEWLAND, N. C.

to bankers, railroad men, farmers, agricultural workers, and others interested in the agricultural development of the mountains.

Nor have the organizers overlooked the women. There were three committees of farm women, one in health, one in wealth and one in happiness. Under health, the women discussed sanitation, food and nutrition, and health habits; under wealth, they discussed income earning, income saving and preservation of foods; and under happiness, they discussed household management, household beautification, recreation in the home, and relation of the home to the community.

In adopting an agricultural program to hasten the development of the mountain region, it first became necessary to study carefully

conditions that have existed and are now factors of importance. Naturally, therefore, the historical facts about agriculture, the present trend and status and the future prospects were placed before the various committees and studied carefully in order to guide them in making the proper recommendations.

HISTORICAL

Sixty years ago there were practically no railroad connections in the mountains of Western North Carolina. Everything produced had to be hauled or driven on foot over steep and rough mountain trails to shipping points. The soil was tilled with crude farm machines

A View of Original Timber Growth Now Remaining Near Linville City.

and commercial fertilizers were not used at all. Every farmer produced enough at home to live on but very little to sell, except beef cattle, sheep and turkeys. Corn, wheat and oats were grown to feed the family and the livestock.

As soon as railroads were built, lumbermen invaded the county, buying the choicest timber at very low prices. Fires usually followed the cutting of the good timber which destroyed the young growth,

leaving great barren areas until grass and shrubs took possession. Along with the cutting of timber came the gathering of roots and herbs, and the digging of minerals. The mills paid good wages for the time which drew heavily on the farmers. The chief income to the people at that time came from lumber, roots and herbs, minerals and the sale of cattle, sheep and turkeys. Money was plentiful; needs for money very few, which made living too easy. It did not take long to get the greater portion of the timber moved, leaving only the lower grades which hardly paid for marketing, likewise the income from mines and roots and herbs was not as great, leaving a greater portion

BEEF CATTLE FOR YEARS HAS BROUGHT IN THE GREATEST FARM INCOME. THE PHOTOGRAPH IS OF TWO BABY BEEF CALVES OF P. O. MERRILL, OF FAIRVIEW, N. C.

of the income to be made by tilling the soil. The increase in population, the need for better schools, roads, and other public improvements has increased the costs of living many times, placing upon the people the responsibility of a better planning of their agriculture to meet the larger needs.

Unconsciously this planning of agriculture has been going on for a number of years. The people have devoted a greater portion of their time to the farms all the time. The increase in population has brought about an increase in the number of farms and smaller farms. The price of land has increased enormously in the last sixty years. The decrease in size of farms and increase in price of land has led to a more intensive agriculture.

As a result of work done at the Mountain Experiment Station and by workers from the State College of Agriculture and the practices employed by the best farmers, much progress has beeen made. The first definite work done along dairy lines in these isolated sections was the organization of a Co-operative Cheese Factory at Sugar Grove, July 25, 1915. The first day sixty-four gallons of milk was made into cheese. The dairy industry has been gaining in importance and Western North Carolina is now recognized as a great section for dairying.

The following figures will give the trend of agriculture for a period of years which will give some light as to the future of agriculture.

Trend of Agriculture

	1890	1900	1910	1920	1924
	Acres	Acres	Acres	Acres	Acres
Corn	276,000	317,000	268,000	243,000	240,077
Oats	77,000	51,000	20,000	20,000	52,701
Wheat	75,000	81,000	51,000	81,000	41,466
Rye	25,000	12,000	18,000	21,000	24,000
Buckwheat	972	4,788	498	635	500
Hay and Forage	73,000	68,000	106,000	162,000	112,622
Potatoes	4,911	7,016	10,536	6,303	12,232
All Other Vegetables	7,000	8,723	11,785	695	9,925
Cotton	1,919	2,876	4,929	5,492	12,226
Sweet Potatoes	2,305	3,196	3,142	2,866	5,173
Tobacco	9,904	3,819	689	2,101	4,750
Dairy Cattle	46,000	60,000	65,000	55,000	75,558
Total Cattle	141,000	144,000	170,000	174,000	.....
Total Swine	172,000	160,000	110,000	107,000	107,000
Total Sheep	106,000	116,000	110,000	46,000	.....

(Burke and Rutherford are not included in this table.)

It will be noticed by observing the table that certain crops have declined in acreage, others have increased. It will also be observed that dairy cattle are on the increase; sheep and swine on the decrease. This table will be of special benefit in giving an idea as to what should be undertaken.

Western North Carolina is now becoming a great resort center. This will give a home market for many of the better and most profitable farm products. We also have to the South and East, sections that want our products because theirs are gone while ours are fresh and good at the proper season. The Western North Carolina farm averages 89.61 acres suited for intensive agriculture, dairying, poultry raising, fruits and vegetables. Of this number, 14.69 acres are under

cultivation per farm. This does not include pasture land. A total of 611,444 acres are under cultivation now as compared to 572,830 in 1890, giving an increase of 38,614 acres. This increase in acreage has not come as an increase in cultivated acres per farm but as an increase in the number of farms. The method of growing crops and livestock has improved and net returns per acre are more. This is probably due to wiser selection of crops and livestock.

In the future development of agriculture, it will require not only the selection of the proper crops and livestock and the proper handling of them, but a closer partnership or community, county and district interest in developing crops and livestock on a commodity basis so that the products will be standard and in large enough quantity to furnish a dependable supply.

This emphasizes the urgent need for a well planned and properly directed movement for advancing agriculture in Western North Carolina. The leaders all over this section have come together and outlined plans and policies and pledged their support in its execution.

PRESENT STATUS

In Western North Carolina there are 3,735,254 acres in farms with an average of 89.61 acres to the farm, and totaling 41,680 farms. There is an average of 14.69 acres under cultivation in 1924. The value of all crops in 1924 was $26,208,025.00. The value of all livestock was $13,103,553.16, making a total valuation of $39,311,578.16. Since the livestock valued consumed the pasture and feed crops, those will have to be taken away to give the true income of the farm. The value of all pastures and food crops produced amount to $13,955,-496.20. This leaves $25,356,081.96 as the gross income from Western North Carolina farms. This gives an income per farm of $600.84.

The two following charts give the 1924 value of crops and livestock, the acres devoted to each and the percent of total.

All Farm Acres—Values

(1924 Crop Reporting Service)

	Acres	*Percent*	*Yield Per Acre*	*Value Per Acre*	*Total Value*
Wooded Land	2,412,870	64.60	.....	.50	$1,206,435.00
Idle Land	240,226	6.44	.....	.....	.....
Corn	289,638	7.75	22.5 bu.	27.70	8,080,900.20
Small Grains	94,245	2.52	11.1 bu.	15.20	1,432,524.00
Pasture	470,714	12.61	.....	4.00	1,882,856.00

Hays	106,634	2.85	1 ton	24.00	2,559,216.00
Cotton	49,389	1.33	270 lbs.	81.20	4,010,386.80
Tobacco	4,818	.14	700 lbs.	154.00	741,972.00
Truck	31,668	.84		160.00	5,066,880.00
Fruit	35,053	.91	50 bu.	35.00	1,226,855.00
Total	3,735,254	100%			$26,208,025.00

All Livestock—Values

(1924 Crop Reporting Service)

	Number	*Income per Farm*	*Total Value*
Dairy Cattle	80,508	$75.60	$6,086,404.80
Beef Cattle	102,867	24.00	2,468,808.00
Sheep	42,378	7.62	322,920.36
Brood Sows	10,681	60.00	640,860.00
Poultry	896,140	4.00	3,584,560.00
Total Value			$13,103,553.16

From a careful survey it appears that the farm wealth in Western North Carolina amounts to $141,747,440.00. This gives an average property valuation per farm of $3,400.85. The interest at six per cent on this amount of money amounts to $204.05, taking this amount from the annual farm income—$600.84, we have left $396.79 as return on farm for labor which does not take off for taxes and depreciation. It is considered that the increase in the price of farm land will take care of depreciation and taxes.

The following table will give some insight as to the farm wealth in each county and in the district:

COUNTY	*Farm Acres in County*	*Farms to County*	*Value Farm Property per Farm*	*County Farm Wealth*
Ashe	268,813	2,963	$4,202.00	$12,456,452.00
Avery	101,417	1,410	2,474.00	3,488,340.00
Buncombe	364,888	5,287	5,119.00	27,064,153.00
Cherokee	231,094	1,923	1,756.00	3,376,788.00
Clay	89,442	1,058	3,171.00	3,354,918.00
Graham	62,340	726	1,864.00	1,353,264.00
Haywood	190,000	2,059	4,962.00	10,216,758.00
Henderson	207,678	2,480	3,950.00	9,796,000.00
Jackson	172,739	1,893	2,369.00	4,483,517.00
McDowell	207,903	1,828	2,457.00	4,491,396.00
Macon	174,745	1,934	2,222.00	4,297,348.00
Madison	245,356	3,035	2,794.00	8,479,790.00
Mitchell	70,275	1,158	2,438.00	2,823,204.00

Polk	113,350	1,378	3,147.00	4,336,566.00
Swain	155,848	1,760	2,103.00	3,701,280.00
Transylvania	88,478	873	3,483.00	3,040,659.00
Watauga	175,690	1,847	4,456.00	8,230,182.00
Yancey	187,183	2,653	2,912.00	7,724,536.00
Burke	327,897	2,503	3,172.00	7,947,025.00
Rutherford	306,123	3,576	3,464.00	11,087,264.00
TOTAL	3,735,254	41,680		$141,747,440.00

THE FUTURE

With the strengthening of the tourist development in Western North Carolina and the purchase of many farms for urban development, there is a feeling among some that the land will soon be too expensive for farming. This would be true if the same type of farming is practiced as has been practiced for the last ten years. The opening up of this section as a resort center is the greatest boost to farming that has ever happened. It is true that price of land has risen and some will rise still higher, due to its location, which will be used for residential development, while other land will be devoted to intensive agriculture.

When we consider that only 14.69 acres per farm are under cultivation and that 64.60% of the land is largely cut-over timber land bringing in a very small income and that 6.44 acres on each farm is cleared but idle, we can see that there is room for a large tourist population with ample room left for farming. No farm population has ever been presented with a greater opportunity for intensive agricultural development than the farmers of Western North Carolina. The tourist population will afford a market, at home, for large quantities of home-grown products. These products will command good prices. It will be easy for one acre to yield more than the average income per farm in 1924, which was $600.84. In looking forward to the future development we must first of all consider the growing of the crops and livestock suited to this section and the ones that are desired by the consuming public here and contributary to this section. In summing up the things that are adapted to this section from a production standpoint and also from what the consuming public demands, we place dairying at the head of the list, poultry raising, second; truck and market gardening, third; fruit raising, fourth; sheep raising, beef cattle and hogs, fifth, and tobacco, sixth.

With the exception of Polk, Burke and Rutherford counties, where cotton is the most important crop, these crops will serve as a basis for future development.

REPORTS OF COMMITTEES

The reports of the various committees appointed by Chairman D. M. Buck were read, discussed and adopted at the afternoon session of the regional meeting on December 17th. These reports thus give the program for agricultural development that will be used by the agricultural workers and the farmers and farm organizations of the section.

These committee reports are as follows:

NOMINATIONS AND RESOLUTIONS

Resolved, that it is the sense of this meeting that agricultural endeavor along all lines in Western North Carolina be speeded up to the end that the increased demands upon the productivity of the soil may be met, and

Resolved, that an Association to promote and increase orderly production and marketing is advantageous and that such an Association should be formed, and

Resolved, that the name of said Association be "Carolina Highland Agricultural Association," and whereas there are already many valuable agencies at work on this line of endeavor herein set out, therefore, be it,

Resolved, that it is the sense of this meeting that when this Association is formed that it shall co-operate with all deserving and meritorious agencies having the same results in view.

We recommend that there be a board of directors formed for this organization consisting of one man and one woman from each county. We further recommend the following officers for the ensuing year:

President, D. M. Buck; Vice-President, J. W. Haynes; Secretary, W. R. Ellerson; Treasurer, R. C. Davis.

Respectfully submitted,

S. F. CHAPMAN, *Chairman,*
C. W. TILSON, *Secretary,*
D. M. BUCK,
H. L. NETTLES,
V. W. LEWIS,
Committee.

AGRONOMY

Soils

The success or failure of agriculture is determined to a large extent by the fertility and management of the soil. The yield of corn is 22.5 bushels per acre, of wheat, 11 bushels, hay, one ton. The yields are small and indicate that our agriculture is suffering due to the soil not being as fertile as it could be. Statistics show that less than one acre per farm is planted to legumes for soil improvement, hay or seed. Statistics also show that on every farm there are 6.44 acres lying out idle.

These figures show that the soil is not receiving the proper consideration which is resulting in small yields and low earning capacity. The yield per acre can easily be doubled and the profit derived by so doing would be more than doubled. There is an average of 14.69 acres cultivated in crops per farm. This seems small at first thought and is low, yet our greatest need at present is not for more acres but improving the acres now under cultivation and the reclaiming of the acres lying out idle. This undertaking should be done well before trying to expand in other directions.

To Increase Soil Fertility

To increase the fertility of the soil in the most practical manner and at least expense, we need to plan our systems in a very definite manner. It is generally recognized that a system of farming where a definite crop rotation is practiced, growing in the rotation some legume, furnishes a variety of crops and a better distribution of labor as well as affording an opportunity of maintaining and improving the fertility of the soil. This would indicate that we need, *for the present, five acres of legumes per farm instead of less than one acre.* In our soil program we need to bear in mind the importance of lime. It is estimated that lime is worth $10.00 per ton to the soil. Legumes and other crops yield better when lime is used. A greater effort need be made to conserve and use barnyard manure to the best advantage. In regard to commercial fertilizers .91 tons are used per farm. This is too small an amount for our soils for the greatest profit. The exact amount that could be used depends upon the soil and the crops to be grown. For truck crops from 500 to 2,000 pounds can be used at a profit. A mixture known as 8-5-5 is good for this purpose. For crops such as corn, acid may possibly be the best grade to use and in smaller quantity than for truck crops. The soil also needs greater depth. There is an average of 1.3 work animals per farm. There are many one-horse and some no-horse farmers. Too often the land is insufficiently broken and no matter how fertile the soil a low yield will result from such practice.

Corn

Corn is one of our most important crops at present, yielding an income of $8,080,900.20 per year. 289,638 acres are devoted to its growth, which is 7.75% of our total farm area. In the last thirty years the acres devoted to the culture of corn has decreased only a small amount. From present observation this decrease will still go further, not that corn is an unprofitable crop but due to the fact that other crops are more profitable and the land suitable for corn growing is limited. This section is so well suited to the growing of truck crops, berries, etc., and the income from them is greater which naturally forces out the growing of corn. There will always be a demand for corn for feeding purposes and if it is not grown it will have to be bought. It is possible for one acre of truck crops to buy several acres of corn. Corn for silage purposes will always be grown as it will compete with most any other crop. The production of corn can be increased without increasing the acreage. The yield could easily be doubled by using better methods of growing.

A prolific corn is more desirable because a greater yield of grain can be made. It is also recommended that the practice of cutting tops and pulling fodder be discouraged as it requires a great deal of labor and causes the loss

of much feed. Corn can be harvested cheaper by cutting the entire stalk and more feed will be saved, also the land will be left in better condition for small grain or other crops.

Pastures

The successful keeping of livestock depends largely upon pastures. Western North Carolina will always be a livestock section and for that reason the pastures warrant careful consideration. At present 470,714 acres are in improved pastures comprising 12.61% of the land in farms. The most important thing to do to a pasture is to keep it grazed and then mow weeds before they seed so that they will not choke out the choice pasture grasses. Many acres of good pasture land have been allowed to grow up in bushes and weeds. The greatest barrier to good pastures is the thought that a pasture will take care of itself and is not of great importance. Pasture land is just as important as any other piece of farm land and should have sufficient attention to keep it fit.

Hay

In this section hay is not produced for sale but to feed to livestock. Approximately four acres per farm is devoted to hay crops. Less than one acre of this is legume hay. The legume hay is better suited to all livestock except working animals; it is also better from a soil-improving standpoint; therefore, more acreage in legume hay need be planted even though it means a decrease in acreage of other types of hay. It is recommended that hay crops be a part of every rotation, excepting on acres where intensive truck growing is practiced and here a legume will prove of value. It is highly desirable to produce enough hay on the farm to take care of the farm needs.

Small Grains

It is generally considered that the growing of small grains in Western North Carolina is not profitable. Considered from only one angle this might be true, but when we take a broad view of the situation we can see where the growing of small grains will always occupy an important place It is important that a crop rotation be followed in any agricultural section for the combined reasons that it gives a variety of crops and more even distribution of labor and is the most economical means of maintaining soil fertility. The grains that will fit into our system to the best advantage are as follows: Wheat, rye, oats and barley. In recent years barley has been grown to a limited extent by some of the farmers and the result has been good. Some growers have made as high as forty bushels of grain to the acre. The beardless variety is possibly the best variety to use since there is less danger in feeding the straw and hay of this variety. The growing of rye is not new in this territory. The selling of seed of a guaranteed variety is something that has been growing in importance in the last few years, especially of the Abruzzi variety. This variety furnishes better winter grazing and yields more grain than the common mountain rye and sells for more than the other. It is possible to build up quite a sale for the seed from this section and quite a few farmers are putting out State College Abruzzi rye looking forward to selling the seed. The success of poultry and livestock growing depends upon the growing of as much feed at home as possible and the growing of small grains is important in this connection.

Many acres left barren and to the mercy of freezing, thawing and washing rains, could profitably be employed growing small grain which would save the soil and give a crop that is valuable for feeding.

Respectfully submitted,

S. C. CLAPP, *Chairman,*
J. R. SAMS, *Secretary,*
E. F. ARNOLD,
S. R. PHILLIPS.
Committee.

AGRONOMY—(SPECIAL CROPS)

Tobacco

The history of tobacco growing in Western North Carolina has varied. From 1890 to 1910 the crop decreased to almost nothing and since that time the acreage has climbed to one-half the production in 1890. The growing of tobacco has never established itself on a permanent basis. This is due largely to the fact that the price has been irregular and the people never became so tied up in it but what they could stop growing it at any time. Since the co-operative organizations have taken such an active hand in marketing it, it is expected that the price will be more favorable and result in the industry becoming more firmly established. Burley tobacco seems to be well suited to the locality, and being close to the market will possibly prove to be satisfactory.

Tobacco is a good cash crop and when a system of diversified farming is practiced, it fits in well. Very little improvement has been made in recent years. It is suggested that if any change is made, the amount of ground per farm for the growth of tobacco in tobacco counties be decreasd rather than increased and the attempt made to grow more tobacco per acre and a better quality of leaf. In counties that are adapted to the growing of tobacco and are not now growing it and where experiments have shown it can be grown, campaigns should be put on to increase the acreage, but not to encourage any one farmer to grow a large acreage. It is recommended that where tobacco is being grown, the yield and quality be improved through proper seed selection and the use of the proper amount and kind of fertilizer.

Cotton

Polk, Rutherford and Burke counties are the only counties in this territory growing cotton to any considerable extent. McDowell is beginning to grow a few acres and the success with which this is grown will determine whether the acreage will be increased. Cotton is a good cash crop and when a system of diversified farming is practiced, it fits in well. The boll weevil has caused the cotton territory to undergo some changes. The boll weevil is not expected to become very destructive in this territory as by dusting it can be controlled at relatively small cost. The income from cotton last year was over $4,000,000 from the counties. The yield per acre was 290 pounds, which is low. This is due to the fact that a very poor system of crop rotation is practiced and as a result the land is not very productive. Another factor entering in is the lack of properly selected seed. The Cleveland Big Boll is a heavy producer of short staple cotton and is a good variety to grow where it will properly mature.

Where quick maturity is desired the King is good, it yields less and has shorter staple than the Cleveland.

It is recommended that an attempt be made to increase the yield per acr rather than to increase the acreage and that this be brought about by prope seed, better cultivation and rotation of cotton land, and the use of prope amounts of fertilizers.

Respectfully submitted,

J. D. KELLY, *Chairman,*
J. W. ARTZ,
EARL BRINTNALL,
F. E. PATTON, *Secretary.*
Committee.

DAIRY AND POULTRY

Dairying

With the exception of the production of fluid milk for home consumptio in the territory adjacent to the larger towns and cities, also a small quantity which is being manufactured into butter and cheese, in Macon, Clay, Watauga Avery and Alleghany counties, little attention has been given to dairying in this section of the State.

The factors largely responsible for these conditions have been: A lack of local markets, poor transportation facilities, and cheap grazing lands which resulted in the development of a livestock industry adapted to such conditions as sheep and beef cattle raising. However, as land values have increased there has been a gradual change from this form of extensive system of farming to a more intensive and profitable system, which includes the dairy cow.

The committee finds that there is only about an average of 2.05 milk cows per farm in this section, the average amount of milk produced annually per cow is around 3,000 pounds, that the number of pure-bred dairy bulls in use is extremely small, and that the demand for dairy products, such as butter and cheese, is much greater than the present supply produced in Western North Carolina.

Suggestions for Dairy Improvement and Development

1. Raise average production per cow.
2. Importation of dairy cattle in undeveloped sections.
3. Better managed and equipped farms.
4. Organized creameries or cheese factories wherever conditions justify.

Methods of Procedure

(a) Raise average production per cow, by the feeding of an adequate and properly-balanced ration, which will easily double the milk production of the average cow.

It is recommended that 1½ tons of legume hay and 3 to 4 tons of silage or roots and from one to two acres of good pasture be provided for each cow in the herd.

(b) By the use of good sires. At least 80% of the dairy sires now in use are either grades or scrubs. Only bulls of the recognized dairy breeds should

be used where milk production is desired. The crossing of one breed with another should be discouraged.

(c) By keeping a production and feed cost record on each cow in the herd, so that all unprofitable cows can be located and slaughtered. This can be accomplished through the organization of cow-testing associations where as many as twenty herds averaging 15 cows can be secured within a reasonable distance. Where the organization of a cow-testing association is impractical, it is important that each dairyman keep private records if he expects to secure maximum production from his herd.

Importation of Dairy Cattle in Undeveloped Sections

The productive capacity of the native cow found in many counties of this section of the State, where markets for dairy products have recently developed, is too low to be profitable; therefore, it is recommended that wherever practical these cows be replaced by good foundation cows which are capable of making a profit.

It is also desirable to increase the size of the herds now furnishing milk and cream to both cheese factories and creameries, whenever the quantity of home-grown feeds will justify.

Better Managed and Equipped Farms

The crop rotation of every dairy farm should be so arranged as to provide an abundance of roughage of the proper kind. This will make possible the production of milk at a lower cost than where most of the feeds are purchased.

More attention should be given on the farms to the care of farm manure. At present great losses are sustained by improper methods of handling these products.

Dairy barns should be constructed so as to be comfortable and meet the sanitary requirements of the market where the product is to be sold.

On account of the inefficiency of the methods of hand-skimming, it is recommended that centrifugal separators be used on farms where the butter-fat from as many as three cows is being produced for market purposes.

Creameries or Cheese Factories

In undeveloped dairy sections the erection of cheese factories is recommended where a market for fluid milk is not available and where the production from 200 cows can be obtained.

The organization of a creamery or butter factory is recommended for sections without a fluid milk market and where the cream from 600 cows can be secured.

In view of the fact that several of the cheese factories and creameries located in this section are now receiving an insufficient quantity of raw products to make possible the most economical plant operation, it is recommended that these plants be patronized so far as practical rather than establishment of new plants.

Due to the fact that only a small amount of experimental work has been carried on by Southern Agricultural Colleges in dairy problems, and that Southern feeding problems are quite different from those of the North and West,

from which sections the majority of our dairy information is obtained, the committee urges that our State College give dairy experimental work, especially production problems, more consideration in the future than has been given in the past.

Poultry

1. *Conditions.*

We find that the existing poultry conditions in Western North Carolina are as follows: 1. That at least 75% of the farms have mongrel chickens. 2. That 75 to 80% of the farms are improperly housed. 3. That 80% of the farms are feeding improperly. 4. That sanitation is badly neglected on the large majority of farms.

2. *Reasons for Existing Conditions Are as Follows:*

(a) Lack of marketing system.

(b) Lack of interest and knowledge.

3. *Methods of Attack for Improvements.*

(a) That every farm have at least 100 purebred hens by 1928 through community hatcheries, club work with boys and girls and ordering baby chickens.

(b) The housing, feeding, and sanitation problems to be encouraged and solved through demonstrations, furnishing plans, home mixing of feeds and organizations for purchasing materials.

(c) The committee sees the need of a year-round market that would reach every community of the section. By this we feel that there should be a large co-operative central market with branches in all producing sections of Western North Carolina.

Respectfully submitted,

GEORGE WALLIS, *Chairman,*
L. D. THRASH, *Secretary,*
J. A. AREY,
F. R. FARNHAM,
HOWARD HAYES,
MRS. LUCY SWIFT,
L. A. AMMON,
W. J. PORTER,
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MR. RUTH,
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Committee.

BEEF CATTLE, SHEEP AND SWINE

Beef Cattle

1. The most serious conditions that confront the beef cattle industry of Western North Carolina at present, are:

(a) The low grade of cattle that are offered for sale and the increasing demand for better grades on the markets.

(b) An inadequate system of marketing cattle.

(c) The increasing demand for veal calves having its effect by lowering e grade. Farmers breed to scrub bulls.

2. In Avery County by a special act of the legislature appropriating for a estock commission and encouraging them to buy a certain number of pure-ed bulls to be placed over the county in different townships in the county. e $1.00. Keeper of bulls retains service fees.

In Madison County a livestock growers' association has been formed to prove the grade and marketing conditions.

3. (a) All organizations in this district encourage the use of purebred bulls d discourage keeping scrubs and grades.

(b) Listing by county agents or other organizations, all producers of ttle of breed, age, price, approximate weight, and date cattle will be sold.

Listing by county agents or other organizations, all buyers of cattle, of eed, age, approximate weight and date buyer wants cattle.

Each county should give this information to all the other counties in the strict and to the division of markets at Raleigh.

(c) Encouraging the use of purebred bulls, producing better calves, so e beef cattle buyer can compete with veal buyers.

4. These changes must come about through the influence of county agents d farm organizations, outlining some one project and getting the farmers terested by advertising and talking the project.

Swine

1. (a) One brood sow to five farms is the average in Western North arolina.

(b) Hogs kept on farms for home use are left in close pens all the time. heir principal feed is table waste.

(c) Meat is cured on many farms by just packing in salt.

2. The majority of the counties are improving their stock, but paying very tle attention to improved management.

3. (a) Increase the number of brood sows kept on farms.

(b) Better and more diversified hog pastures including fences.

(c) Published formulas for curing meat, including bulletins.

4. Encouraging farmers to work for profitable gains rather than cheap ains.

Sheep

1. The most serious conditions hindering the sheep industry in Western orth Carolina are:

(a) Farmers will not take time to give them the proper care and treat-ent.

(b) Insufficient fences.

(c) Dogs.

2. (a) Nothing.

(b) Better fencing is on the increase and this alone will help the sheep industry.

(c) Farmers who are bothered with dogs have begun to poison dogs that kill their sheep. *Enforce* a good dog law.

3. Organize community dipping vats to encourage control of scab, ticks and other diseases and pests.

Community organization to drench, to control internal parasites.

Encourage by association use of purebred rams, docking and castrating all lambs.

4. Educational program put on by county agents and agricultural organizations.

Respectfully submitted,

W. R. ELLERSON, *Chairman,*
E. C. TURNER, *Secretary,*
W. W. SHAY,
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Committee.

HORTICULTURE

Apples

Ten years ago not a single power spray outfit existed in the fruit area of Western North Carolina. Practically little fruit was properly graded and packed in boxes. The practice of heavy pruning was in vogue at this period, resulting in trees of small size and low production. Very little thorough spraying was practiced. Many new orchards were planted on the tops and steep sides of mountains with standard varieties. In these orchards the practice of heavy pruning was still carried on, delaying the bearing age of these orchards.

At the present time very few new plantings of orchards are being put out. The present production is still being moved by truck in bulk or loose in car with the box method of packing being used by some individual orchardists and marketed through individual customers or through jobbers.

Suggestions for Improvement

1. The economical production of a volume of high quality and conditioned fruit with more attention to marketing methods in commercial orchards.

2. The program of general orchard management in the commercial orchards of bearing age such as moderate pruning, proper soil management, fertilization, spraying, top grafting of undesirable varieties with those recommended for young orchards, grading and packing and standardization of the pack with the adoption of merchandising methods, should be followed.

3. Adoption of district trade mark, establishment of storage facilities, adjustment of freight rates.

For New Plantings of Commercial Orchards

Centralize the new plantings in sections located near shipping points on proper orchard sites that can be economically managed. Confine the varieties

Stayman, Delicious, Winesap and Rome Beauty for late picking or storage. r early summer the Yellow Transparent and Early Harvest and Red June. r fall, the Bonum.

Peach Varieties

Belle of Georgia, Hale and Elberta for commercial orchards with at least enty-five of the latter.

Small Fruits

Encourage additional plantings of small fruits such as strawberries, raspries, grapes; also increased plantings of sour cherries.

Vegetables

1. To furnish the individual home with vegetables to feed the family.) To grow truck crops to feed the summer tourists. (*b*) To develop commercial trucking centers in order to supply the local wholesale and retail trade d ship out to nearby and Southern markets of carlots of vegetables such as tatoes, cabbage, tomatoes, snap beans, head lettuce, rutabagas, etc.

Procedure:

2. Centralize commercial truck gardening in communities in order to cre- e a dependable supply of standard vegetables properly graded and packed a means of establishing orderly marketing methods.

The changing conditions in Western North Carolina have brought a rapid crease of land values which have necessitated a revision of agricultural policies hich places particular emphasis on intensive types of agriculture. This focuses e attention on horticultural products and creates an opportunity in this field.

Some system of general publicity through the proper channels is advocated r the promotion of the fruit and trucking industry.

Respectfully submitted,
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C. D. MATTHEWS, State College Station, Raleigh,
ROBERT SCHMIDT, State College Station, Raleigh,
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Committee.

FORESTRY

1. Object: To secure a profitable crop on every acre of land in the mountins capable of growing timber or other forest products and not needed for griculture. To provide for the orderly marketing of these forest crops.

2. Procedure: Survey by counties of forest area of farms (statistics now how 64.6% of farm area is forested). Expressed in terms of acres this is 412,870 acres in the twenty counties embracing Western North Carolina. Most f this, however, is cut-over land now open to reforestation or other development.

3. Recommendations: Working plans for each farm should be formulated. his plan to include fire protection, a system of cutting to secure renewal, de-

termination of adapted species to be encouraged for new crop, and metho of stocking the burned and devastated areas.

4. Procedure: Co-operation should be secured between the different cou ties, the Fire Warden, the State Forester, the Extension Forester, and the U. Forest Service in the development of forestry.

Respectfully submitted,

R. W. GRAY,
R. L. SLOAN,
ROBT. CALHOUN.
Committee.

AGRICULTURAL CLUBS

The Committee on Agricultural Clubs finds that the following summary conditions prevails in this section insofar as extension organization is concerne

One county, Buncombe, has a farm agent, home agent and assistant far agent.

Three counties, Rutherford, Polk and Transylvania, have farm and hon agents.

Ten counties, Avery, Ashe, Henderson, McDowell, Burke, Madison, Jac son, Macon, Clay and Cherokee, have only farm agents.

Six counties, Haywood, Swain, Watauga, Graham, Yancey and Mitche have no agricultural agents employed.

Two counties, McDowell and Buncombe, have organized boys and gir club work.

None of the counties have organized club work with boys.

Four counties, Polk, Buncombe, Transylvania and Rutherford, have orga ized club work with girls.

Six counties, Macon, Henderson, Rutherford, Ashe, Polk and Transylvani have unorganized junior work.

Twelve counties have neither unorganized or organized club work. Thes are: Cherokee, Haywood, Swain, Watauga, Graham, Yancey, Mitchell, Burk Madison, Jackson, Macon and Clay.

Ten counties have adult organization. These are: Henderson, McDowel Madison, Avery, Watauga, Clay, Rutherford, Buncombe, Polk and Transylvani

Ten counties have no adult organization. These are: Cherokee, Haywoo Swain, Jackson, Mitchell, Yancey, Clay, Graham, Burke and Ashe.

Suggestions as to Improvement

We realize the value and need of organized effort in both junior and adu work and we make the following suggestions as to the improvement of existin conditions:

1. Further extension of organization (both junior and adult) in all counties
2. Strengthening of those organizations already in operation.

Methods for Carrying Out the Suggestions for Improvement

1. Publicity.

Calling to the attention of the people the results of successful organizatio through the medium of the press, special meetings, women's clubs, schools fairs and exhibits.

2. Local leadership. (Community, County and State, County Agents, Home nts.)

The development of local leadership through the study of organization nods and the establishment of training courses for those who show special ty for leadership in community life.

3. Research.

Study of successful methods.

By making rural surveys in which the results would give the trend of rural elopment and in such form as to be readily understood by rural people.

Respectfully submitted,

M. E. MARSH, *Chairman,*
S. R. WALLIS, *Secretary,*
MRS. ROXBY,
W. L. SMARR,
JAMES M. GRAY.
Committee.

AGRICULTURAL ENGINEERING

The conditions are that the people do not know the economical and recrea- ial value of farm and home equipment.

In Western North Carolina the committee thinks that 20% of the farm and nes have improved their conditions in some way.

Buildings: More and better farm buildings that will more adequately take e of the different types of livestock, especially dairy and beef cattle, hogs l poultry. A silo for every farm having as many as ten to twelve dairy cows fifteen to eighteen beef cattle.

An adequate implement shed for housing and repairing all machinery when in use, reducing the great annual loss from this source.

Proper storage houses for potatoes and apples so that they may be kept in rage without deterioration for a reasonable length of time and thus distribute marketing season over a greater length of time.

Irrigation: More surface irrigation for gardens and truck patches, espe- ily where it is possible to get this by gravity.

Home Water Supplies: Running water for every farm home, first in the chen and then a bath room.

Water Power Development and Rural Electrification: The development of all water powers for lights and small motors. Extension of rural electric e into the farm communities.

Drainage and Terracing: Drainage for the rich bottom lands so that max- um yields may be obtained.

Prevent erosion by terracing and cover crops.

The radio is the greatest source through which we may obtain recreation d entertainment and is also a source through which we obtain a great deal information, therefore we suggest that a radio should be in every home.

Organization of Community

1. Local leader.
2. Organization of communities.
3. Suggest survey of communities.
4. Create desire for home and farm equipment by tours and campaigns.

Respectfully submitted,
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W. R. ANDERSON, *Secretary,*
CLAUDE WELLS,
MRS. SARAH PORTER ELLIS,
MRS. CHARLES ASHWORTH.
Committee.

AGRICULTURAL ECONOMICS AND MARKETING

The first principle to be followed in agricultural economics for Wes North Carolina is that production be adjusted to markets, and the secon that livestock and crops be standardized according to the market demands.

In connection with these two cardinal principles, your committee will rec mend in this report a full study of the production and consumption in Wes North Carolina of the markets that are open to us.

A great forward step has been taken in Western North Carolina agri ture during the last few years in the matter of marketing farm produce. Th are Farmers' Federations functioning in five counties, Farm Bureaus funct ing in one county, and a Curb Market in one county; individual commo organizations handling potatoes, livestock and cabbage in a number of the co ties. This year there has been a very marked increase in the shipment of poultry in the counties. The total business through farmers' organization Western North Carolina will total for 1925 approximately $2,000,000.

We recommend in view of the acute need of marketing that those co ties which have not yet marketing organizations, make a study of marke organizations with a view to organizing along these lines in order to get ec omy in group action.

The State College is conducting studies and surveys of twenty-five fa in the Eastern part of the State having to do with the problems of indivi farm management. A careful account is made over a period of months of farm operations. When this study of the individual farms is completed, i compared with the standard farm of similar size. Recommendations are t made for the reorganization of the farms, which would according to estima increase the income from the farm anywhere from $500 per year up. recommendation will be followed out this year in the field and checks m with the estimates. A similar study is to be started January 1st in Ma County and your committee felt the value of this study to be so great that t hereby wish to include their appreciation of the State College for its deci to begin this work in Western North Carolina. We hereby recommend t similar study be undertaken in other Western North Carolina counties.

Owing to the fact that in the existing conditions with high-priced land with high freight rates that certain crops such as forage, hay, and grain cr such as corn, wheat and oats cannot be shipped out of this region at a pr and owing to the fact that there are certain other commodities such as e and butter which Western North Carolina has to import in great quantit

ur committee recommends a study of the consumption of Western North rolina products be made by Federal and State Research Departments and t this study be presented at our next annual meeting and be the basis upon ich a definite recommendation as to which crops can be most profitably own in the different counties. We hope that this study will be a full study aling with livestock, crops, fruits and vegetables and dealing with the con-nption needs of Western North Carolina and also with a survey of the prob-y future needs of this region. Also, including a study of the markets avail-e to Western North Carolina. We also recommend that in order to maintain s program in Western North Carolina, correct information with reference supply, demand and current market information, and advise as to probable nd, be supplied by State and Federal agencies.

Respectfully submitted,

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J. V. ARRENDALE, *Secretary,*
FRANK CATHEY,
F. L. FITZSIMONS,
I. O. SCHAUB,
DR. G. W. FORSTER.

Committee.

REPORTS OF THE HOME DEVELOPMENT COMMITTEES

No program for the agricultural advancement of a country can go very without involving the welfare of the home. The home is the center around ich all else revolves. Being mindful of this, committees were appointed to nsider the development of the home and of home life. These committees con-ered the means by which a people may attain health, wealth and happiness, ding that these three things might be goals toward which a home in Western rth Carolina should strive in reaching the ideal state.

Wealth

The Wealth Committee realizes that the development and growth of West-n North Carolina depends upon the ability of the people to save as well as rn, especially at this time when so many of the mountain people are selling eir farms. Therefore, we recommend:

1. That the Home and Farm Agents give special courses in (*a*) intelligent ying; (*b*) safe investments; (*c*) budgeting the family income.

2. That the farm women be taught to save (*a*) By learning the value of rving simple, healthful foods to the family; (*b*) By learning the value of nning the whole wardrobe before buying any part of it.

3. That each club member be encouraged to start a savings account for me definite purpose as the improvement of her own room, or for higher ucation.

4. That each county establish a curb or bazaar market in order that the rm women may exchange their surplus vegetables, fruits, canned goods and

dairy products for the comforts and luxuries so much needed in the farm homes.

5. That more money be spent on higher life, special attention being given to the reading matter and music.

This committee realizes that there are many other things which would add to the comfort and beauty of the rural homes, but we have recommended only a few things which we feel are most needed.

Respectfully submitted,

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MISS ADA WALKER, *Secretary,*
MRS. GEORGE B. GLENN,
MRS. S. B. TWEED,
MRS. J. W. HUSTON,
MISS JULIA DEAVER.

Committee.

HEALTH

The Health Committee realizes that happiness in the homes of our people depends largely on the health of the individual members. To insure health emphasis should be laid on the prevention of disease rather than on its cure. We wish to recommend a few practices which should be adopted in each county and be carried out in each farm home. In carrying out a health program work should be done along two lines, namely (*A*) Sanitation and (*B*) Foods and Nutrition.

(*A*) In order that sanitary conditions may be improved in Western North Carolina, we recommend the following:

1. A district-wide campaign for screening the homes, a set goal as to percentage to be decided for each county.

2. Provision should be made for the sanitary disposal of sewerage, a question particularly pertinent in this section because of real estate developments and the resulting flood of people coming here.

3. Installation of an adequate and pure water supply in each home and one heating system to replace a number of stoves in order to lessen the work of the housewife and provide even temperature throughout the home.

(*B*) We suggest the following in connection with the nutrition program:

1. We believe that food habits should be taught to men, women, girls and boys because the food which is eaten and assimilated is the most important factor in the upbuilding of health and much of the shiftlessness and lack of initiative is due to lack of properly balanced food.

2. The suggestion is that community clubs, boys' and girls' clubs, women's clubs and home demonstration clubs and parent-teachers' associations are the proper media for carrying out a nutrition program.

3. We recommend that in carrying out the nutrition program, we strive to reach the following goals in each home:

(a) Enough knowledge of food values to enable intelligent substitution of foods in diet.

(b) Good food habits, stressing drinking of water, regularity in eating and attention to protective foods such as milk and green vegetables.

(c) The use of score cards for checking up on family and of the growth curves for children as a help to encourage the observance of good health rules.

(d) Particular emphasis on serving the prescribed diet in an attractive but simple form to members of the family, showing the incidental value to digestion, of pleasant table conversation and of orderliness of the meal through the teaching of table manners.

(e) Adoption of special diets when needed as in constipation, for underweight and over-weight and in pre-natal and post-natal cases.

(f) Proper methods for cooking vegetables, milk, eggs, bread and simple desserts; striving for plain rather than fancy cooking. This should include hot and cold school lunches, the making of good butter and cheese, and the proper care of milk.

(g) Conservation of food to provide for a balanced diet throughout the year and also encouragement in keeping a family canning budget.

(h) Tying up the daily diet with the garden, poultry yard and the family cow, planning the proper amount of vegetables that green and fresh foods may be had at all seasons.

Respectfully submitted,

MISS LULU CASSIDY, *Chairman,*
MISS GLADYS PERRY, *Secretary,*
MRS. JANE S. McKIMMON,
MRS. N. R. ELLISON,
MRS. R. L. KILPATRICK.
Committee.

HAPPINESS

Woman in making a home has for her higher aim the happiness of her family, and happy homes shed such influences upon the surroundings as to build up a happy community. A state of happy communities is the goal for which we, the Happiness Committee, would strive.

Since the rural women in the past have been handicapped because of lack of means with which to purchase equipment to carry on their household operations and in view of the fact that to some of them the means are coming to be available we, the Happiness Committee, recommend the spread of information, through every available channel about where to purchase and how to use equipment for the following purposes: (*a*) Water in every farm home; (*b*) Lighting and power lines; (*c*) Methods of securing fuel; (*d*) Community laundries; (*e*) Improved kitchens; (*f*) Plans for budgeting the farm woman's time. And we would recommend that the State Extension Division make available, as far as possible, bulletins containing information along these several lines.

We believe that with the building of good roads in Western North Carolin that the farm people are becoming interested in the appearance of their home and home grounds and we would recommend that a movement be put in motio to give out information through every possible source concerning the principle of (*a*) Locating homes and farm buildings; (*b*) The types of buildings bes suited to localities; (*c*) Inside arrangement and decoration of homes; (*d*) Plan ning and planting the home grounds, using native plants and cultivating a appreciation for same. And we further recommend the publication and dis tribution of bulletins giving information on these subjects.

We believe that with the use of machinery and good equipment the farn family will have more leisure time and that the right use of leisure time i most important in the building of character and the making of a happy life With these thoughts in mind, we suggest that some time and thought be give to recreation and culture, namely: (*a*) Music, through family and communit singing, stringed orchestras and their accompaniments, musical plays and games (*b*) An appreciation of art and beauty in varied forms; (*c*) That reading b encouraged, especially farm papers and magazines, good fiction and curren literature, discouraging the cheap magazines on sale at public news stands (*d*) That closer social contact be established by means of community gather ings and events, which will bring the farm people together at frequent intervals As one source of information and assistance along this line we would recom mend the Playground and Recreation Association of America.

4. We do further recommend that the farm people be enlightened as t their civic responsibility to their community and as to the position, duties and value of co-operating with the various county boards and officials, namely: County Board of Education, Public Welfare, Public Health, Farm Demonstra tion Agent, Home Demonstration Agent and Civic Clubs.

5. That the organization of boys' and girls' clubs be encouraged. That community clubs and community buildings be fostered and that prizes be offered and every means be employed for the development of community pride, giving expression and evidence of increased happiness through better living conditions.

Respectfully submitted,

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MISS MARTHA BOSWELL,
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Committee.